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COSMOLOGY AND THEOLOGY: INDEPENDENCE, DIALOGUE, OR INTEGRATION? A PROPOSAL INSPIRED BY GEORGES LEMAÎTRE

INTRODUCTION

One of the primary objectives of human cognitive activity is to construct a relatively comprehensive and coherent worldview encompassing scientific, philosophical (metaphysical, epistemological, philosophical-natural, axiological), and theological elements. This raises the question of how these elements should be related to each other. Are they all equally significant, or can they be prioritised and ranked in some way? If so, what criteria should be applied in their evaluation?

In the process of forming a worldview and establishing relationships between natural and religious knowledge, philosophical analysis plays a crucial role. On the one hand, scientific theories exhibit openness to various philosophical interpretations; on the other hand, theological elements within the worldview, when viewed from a philosophical perspective, demonstrate openness to the results of science. A synthesis formed in this way can become a valuable proposal for constructing a worldview grounded in scientific achievements, complemented by elements of philosophical interpretation and religious beliefs that are not in conflict with them (HAJDUK 2007, 329).

This article will address the question posed in the title regarding the relationship between natural cosmology and theology. The starting point for our

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analysis leading to a proposed solution is a reconstruction of Georges Lemaître's views on this relationship, accompanied by an evaluation of these views. In interpreting Lemaître's position, the framework proposed by Ian G. Barbour will be employed. Barbour distinguished four types of science–religion relations: (1) conflict, (2) independence (neutrality), (3) dialogue, and (4) integration (BARBOUR 2000, 2–4). Within this framework, we will attempt to place Lemaître's position, assess its epistemic value, and present an original proposal in response to the question posed in the title.

The realisation of this objective will proceed in two stages. In the first stage, Lemaître's views on the issue at hand will be presented and analysed in relation to Barbour's typology. This analysis will highlight the weaknesses of Barbour's proposal and, more broadly, the challenges involved in developing a fully adequate typology of the science–religion relationship. In the second stage, an attempt will be made to assess Lemaître's position and formulate an original proposal on the relationship between cosmology and theology, and, more generally, between scientific and religious knowledge. This article argues that Lemaître's approach exemplifies a fruitful model of independence-with-dialogue between cosmology and theology.

1. LEMAÎTRE'S CONCEPTION OF THE RELATIONSHIP BETWEEN COSMOLOGY AND THEOLOGY

Georges Lemaître, the author of the primeval atom hypothesis (later known as the Big Bang theory), viewed science as a unique human endeavour aimed at discovering the truth about the world. However, he was also aware that this goal was pursued through both everyday and supernatural cognition. The latter, he argued, allows one to grasp truths revealed by God that would be cognitively inaccessible to human reason alone. It is the Lord God who, by creating the world and the laws governing it, made it knowable and who endowed humans with the ability to comprehend both the natural world and revealed truths. Human knowledge is inherently approximate, and its acquisition enables us to progressively approach the truth concealed beneath the phenomenal layer of reality. The two types of cognition—natural and supernatural—are entirely distinct, and the difference between them cannot be erased or transcended. Guided by this conviction, Lemaître advocated for the independence of both cognitive domains (LEMAÎTRE 1937, 65; 1960, 1–14; TUREK 1984, 33–35).

In Lemaître's meta-scientific views, one can discern a significant influence of positivist ideas, which dominated the scientific landscape of his time and called for the exclusion of all philosophical and religious elements from scientific discourse. At the same time, his thought was shaped by the intellectual climate of the University of Louvain, which was characterised by a commitment to integrating philosophy with the findings of the natural sciences and to overcoming the distrust—or even hostility—that often marked the relationship between science and faith.

As the originator of the concept of the primeval atom and the related idea of a temporal beginning to the evolution of the present Universe, Lemaître was at times accused of promoting creationist ideas and of using cosmology to support the religious doctrine of creation.[1] However, such accusations were entirely groundless and misrepresented his understanding of the relationship between science and religion. His belief in God the Creator did not dictate his cosmological theories—though it would also be a mistake to claim that he was wholly uninfluenced by theological questions or indifferent to them (KRAGH and LAMBERT 2007, 466). This is illustrated by the final paragraph of the original typescript of his letter to *Nature*: "I think that everyone who believes in a supreme being supporting every being and every acting, believes also that God is essentially hidden and may be glad to see how present physics provides a veil hiding the creation" (LUMINET 2011, 2918).

Out of concern that his hypothesis might be perceived as support for the Christian claim of God's existence, Lemaître chose to omit this paragraph from the final version of his letter (KRAGH and LAMBERT 2007, 466).[2]

Until the end of his life, he remained faithful to his concept of a supreme and inaccessible God. This conviction enabled him to maintain a strict distinction between theological claims concerning the supernatural act of creation and scientific hypotheses regarding the natural origin of the universe. As

[1] Recalling his conversation with Einstein, Lemaître wrote, "When I told him about the Primeval Atom, he interrupted me: 'No, not that, it too suggests creation.'" (HELLER 1980, 37). Others, such as Arthur Eddington, similarly found it difficult to accept the hypothesis of a sudden beginning of the Universe. This attitude was quite common among physicists and astronomers in the 1930s (LUMINET 2011, 2925).

[2] A separate issue is whether this was solely Lemaître's decision, or whether he was rather persuaded by the publisher. According to Tambor (2023, 255), "The fact that Lemaître crossed out this sentence shows, on the one hand, his respect for the autonomous methodology of the natural sciences, and on the other, his deep conviction of God's presence in the world He created—a presence that is hidden, yet very real."

both a theologian and a cosmologist, he was acutely aware of the dangers involved in conflating these two domains (LUMINET 2011, 2918). Lemaître accepted both the notion of an initial singularity and belief in God the Creator, yet in the relationship between scientific knowledge and religious belief, he consistently emphasised their independence. He regarded them as two fully autonomous, though not mutually exclusive, domains of human cognition. In his view, scientists engaged in scientific inquiry should set aside religious beliefs. This did not imply a prohibition against interpreting scientific theories through a philosophical or religious lens; however, such interpretations should never be mistaken for scientific claims. For these reasons, Lemaître firmly distinguished between the beginning of the physical evolution and its creation. He made this point explicitly in his address at the Sixth Catholic Congress in Malines (1936), where he drew a clear line between natural truth, "directly proportionate to the power of our intelligent nature" and supernatural truth, "placed within our reach by Christ and His Church" (DWYER 1994, 474).

When Lemaître listened to Pope Pius XII's address to members of the Pontifical Academy of Sciences in 1951, he was deeply perplexed by the Pope's interpretation of scientific knowledge as a confirmation of the Christian worldview. Referring to contemporary cosmological theories, the Pope endorsed the Big Bang model and stated: "Indeed, it seems that the science of today, by going back in one leap millions of centuries, has succeeded in being a witness to that primordial *Fiat Lux*, when, out of nothing, there burst forth with matter a sea of light and radiation, while the particles of chemical elements split and reunited in millions of galaxies" (PIUS XII 1951, 14).

The speech had a clearly apologetic intent, with scientific data selectively employed to support theological claims.

The papal address drew heavily on the views of Edmund Whittaker (1946), who had used cosmological arguments in defence of the Christian faith.[3] This was an approach with which Lemaître could not agree. He deliberately avoided being drawn into the controversial debate and asked his friend, Fr. Daniel O'Connell of the Vatican Observatory, to intervene and discourage the

[3] Sir Edmund Taylor Whittaker was an English mathematician, mathematical physicist, and philosopher. Pabjan (2008, 110) notes that his views on the relationship between theology and the natural sciences underwent a significant transformation. Before his conversion from Anglicanism to Catholicism in 1930, Whittaker argued that the foundations of faith should not be grounded in scientific inquiry. After his conversion, he became increasingly interested in theological questions and adopted the position that cosmology could provide arguments supporting both the existence of God and the coherence of a religious worldview. He elaborated on this view in his monograph *Space and Spirit* (1946).

Pope from making similar statements in the future. This was particularly important in light of the Pope's planned address to the International Astronomical Union the following year. In that speech, the Pope made only a brief reference to "the cosmic processes which took place in the first morning of Creation", adding that where human intelligence can go no further, faith must take over (DWYER 1994, 745).

This statement was much more in line with Lemaître's views, which he clearly articulated at the 1958 Solvay Conference in Brussels. Referring to his own hypothesis of the primeval atom, he stated:

> As far as I can see, such a theory remains entirely outside of any metaphysical or religious question. It leaves the materialist free to deny any transcendental Being. He may keep, for the bottom of space-time, the same attitude of mind he has been able to adopt for events occurring in non-singular places of space-time. For a believer, it removes any attempt to familiarity with God, as were Laplace's chiquenaude or Jeans' finger. It is consonant with the wording of Isaiah speaking of the Hidden God, hidden even in the beginning of the universe. (LEMAÎTRE 1958, 7)[4]

He reaffirmed this view in an unpublished typescript of an article prepared for the *Japanese Catholic Encyclopaedia*, in which he described the explosion of the primeval atom:

> We may speak of this event as a beginning. I do not say a creation. Physically, it is a beginning in the sense that if something has happened before, it has no observable influence on the behaviour of the universe, as any feature of matter before this beginning has been completely lost by the extreme contraction at theoretical zero.… Physically everything happens as if the theoretical zero was really a beginning. The question if it was really a beginning or rather a creation, something starting from nothing, is a philosophical question which cannot be settled by physical or astronomical considerations. (HELLER and GODART, 1985)

[4] Both expressions used by Lemaître, "Laplace's chiquenaude" and "Jeans' finger", refer to different views on God's role in natural cosmological processes. The first phrase, coined by Pierre-Simon de Laplace, was used to emphasize that nature operates according to its own laws and does not require Divine intervention in the form of "snaps" (*chiquenaude*). The second expression was introduced by Sir James Hopwood Jeans, who proposed that God could "manually" (with a "finger touch") guide the evolution of the Universe.

As is evident, Lemaître advocated for a clear distinction between scientific (cosmological) inquiry and philosophical or religious reflection. He strongly opposed drawing metaphysical or theological conclusions directly from scientific (natural) theories, arguing that the findings of the natural sciences cannot determine the validity of non-empirical claims—they neither confirm nor refute them. He maintained that scientific theories may accommodate a range of philosophical and religious interpretations, yet none of these should be regarded as scientific assertions. Accordingly, he emphasised the importance of distinguishing between the beginning of the evolution of the present universe and the absolute beginning of existence, as understood in philosophy and theology. Lemaître's position can thus be described as a form of *methodological purism* regarding the relationship between cosmological and theological knowledge (TUREK 1984, 43).

In both his theoretical outlook and scientific practice, Lemaître was guided by the principle of the autonomy of the three domains of human cognition: science, philosophy, and religion. Each of these fields has its own methods of inquiry, specific language, and distinct criteria for justifying claims. Accordingly, cosmologists should conduct their research independently of their religious beliefs. Although some connections between these domains do exist, they are not logical or deductive in nature. For example, scientific theories can be interpreted philosophically, but such interpretations go beyond the boundaries of science proper.

Conversely, when certain questions cannot be resolved within one domain, they may be approached through another (LEMAÎTRE 1929, 216). Despite his methodological rigour, Lemaître thus supported the possibility of cooperation among these domains in the search for answers to fundamental human questions about the nature of reality (TUREK 1984, 44). However, any such proposal must be advanced with full awareness that it lies beyond the scope of the natural sciences.[5]

[5] Questions such as the reason for the existence of the universe or the origin of the order present within it are particularly significant in the context of the relationship between cosmology and theology. The latter issue, the existence of order, deserves special attention. Philosophical reflection on the findings of cosmological research points toward the rational structure of the universe. It is this very rationality that enables us not only to study and explore the cosmos, but also to discern a deeper meaning within it. As Michał Heller writes, "The Whole is the Great Footprint of God—the Mind of God, the creative design inscribed in the existing universe. All scientific theories, all efforts to interpret them correctly, and all philosophical inquiries are a collective effort of humanity to decipher this creative Design from the structure of what exists" (HELLER 2008, 213).

When attempting to situate Lemaître's views within Barbour's typology of possible relationships between science and religion, it is important to acknowledge that this classification has been subject to various criticisms. These include, among others, the problematic use of the term *conflict*, the reduction of religion primarily to Christianity, the broad generalisations concerning the components of the science–religion relationship, and the omission of underlying motivations such as personal or institutional factors.[6] In response to these criticisms, Barbour (2002) acknowledged that the terms *science* and *religion* must be used with caution. However, he argued that historians still find these terms useful. He agreed that the boundaries between the proposed types of relationship are not clear-cut, citing the difficulty of distinguishing between dialogue and integration as an example. He also emphasised that any typology should not replace exploration and research, but rather support them.

An analysis of Lemaître's views reveals that Barbour's typology does not fully capture the complexity of the science–religion relationship. The issue extends beyond distinguishing dialogue from integration; it also overlooks the numerous intermediate positions between strict independence (as in NOMA—Non-Overlapping Magisteria) and full integration of scientific and religious knowledge. The concept of dialogue itself can be interpreted in various ways: from mutual openness and the enriching exchange of ideas while maintaining complete independence, to cooperative efforts aimed at achieving integration between the two domains of knowledge. Lemaître's position demonstrates that it is possible to clearly distinguish between scientific (cosmological) knowledge and religious (theological) knowledge, while recognising not only the possibility but also the need to build a coherent vision of reality. However, it is crucial to be mindful of the level at which such reflections occur and to carefully distinguish between subject-matter knowledge and its philosophical interpretation.

In summary, Lemaître's views on the issue under discussion can be summarised as advocating the principle of autonomy of science and religion. He believed as follows: (1) these are two independent but not mutually exclusive domains of human cognition that should not be conflated; (2) scientific theories can indeed be interpreted through the lens of a particular philosophy or faith, but none of these interpretations should be regarded as scientific theses; (3)

[6] Geoffrey Cantor and Chris Kenny (2001) deemed Barbour's typology to be "useless, if not completely untenable". See also J. H. EVANS and M. S. EVANS 2008.

the beginning of time in his cosmological model is neutral with regard to metaphysical and theological issues (it does not support either theism or materialism); (4) to avoid misunderstandings, distinct terms should be used to differentiate between the natural beginning (the start of the universe's evolution) and the absolute beginning (the origin of existence). From this principle of autonomy, Lemaître derived the prohibition of using cosmological findings to support or justify theological theses. He believed that conflicts in the science-religion relationship arise when this principle is violated, and either party oversteps its competence.

2. EVALUATING LEMAÎTRE'S VIEWS AND PROPOSING A NEW APPROACH

Lemaître's position seems to be in line with the methodological principles developed in contemporary philosophy of science, which define the relationships between various scientific disciplines. In the case of the natural sciences and theology, this distinction is particularly emphasised with regard to epistemological and methodological uniqueness. Such separation is supported both by those who deny the rationality of theological knowledge and by those who recognise its value. Both groups advocate for its independence and autonomy from natural and philosophical knowledge. The justification for this distinction lies in the differences in the subject of research, cognitive goals, methods for achieving them, conceptual frameworks, and sources of knowledge, as well as the ways of justifying theses (TUREK 2011a, 58).

Recognising the distinctiveness of natural science and theology entails accepting two principles: mutual autonomy and epistemological and methodological homogeneity. The first ensures the independence of research and protects against attempts to subordinate one field of knowledge to another. Such attempts have historically led to well-known conflicts. A violation of this principle would also result in a hybridisation of the two types of knowledge, for instance, a return to the "God of the gaps" in the natural sciences or the use of scientific hypotheses and theories to justify theological theses. This would significantly undermine the cognitive value of both fields, which must remain internally consistent and methodologically coherent.

The second principle, the postulate of epistemological and methodological uniformity, directly follows from and elaborates upon the first. It requires that the scientific procedures used to establish relationships between the studied

aspects of reality operate within the same cognitive domain. Specifically, in processes such as inferring, proving, defining, explaining, interpreting, justifying, and verifying, both components of these procedures must belong to the same cognitive plane, be expressed in the same language, and adhere to the same research methods (TUREK 2009, 9–10). Therefore, theological theses cannot be justified or falsified by scientific theses, nor can scientific terms be defined using theological terminology.

Theological cognition has a specific character, closely aligned with metaphysical inquiry. Scientific cognition, in contrast, based on empirical knowledge, operates on a distinct epistemological, methodological, and linguistic plane. The two domains do not intersect or, in Kuhn's terms, are incommensurable. Their separateness is rooted in differences in the objects of study, the objectives pursued, the conceptual frameworks, and the sources and methods of acquiring knowledge. According to the principle of methodological naturalism, a scientist should focus on studying the material world and refrain from searching for signs of God's presence within it. The object of theological research is a transcendent, supernatural, divine reality that transcends the capabilities of the empirical methods employed by the scientist. The languages of both fields are untranslatable, with even their statements carrying different meanings. Moreover, the methods used to justify scientific and theological theses are entirely separate. All these factors support the need to clearly distinguish between these two cognitive domains (HELLER 1981, 67; TUREK 2011a, 58–60).

In this context, it is clear that Lemaître's views on the issue at hand were fully aligned with the aforementioned principles. However, several questions arise: 1) Does adherence to these principles lead to an attitude of isolationism between the two cognitive domains? 2) Did Lemaître advocate for such isolationism merely as a way to avoid conflict? 3) Is it possible to adhere to these principles while still engaging in dialogue between science and theology? 4) Can natural and theological knowledge be synthesised (integrated) into a coherent picture of the entire reality?

There are many reasons to conclude that the extreme isolationism of distinct cognitive domains (as exemplified by NOMA) benefits neither of them. As Bronk (1998, 247–48) argues, science should, for many reasons, be of interest to theology, because "it occupies too significant a place in culture, and the problems it raises are too important, also for religion and theology, to be left to scientists alone." In Bronk's view, a theologian must take into account

the current understanding of the world and science. They should also be familiar with the methodological and philosophical approaches to interpreting scientific theories in order to determine whether they pose a threat to faith and religion, or whether they require a shift in the theologian's previous way of thinking. One of the key tasks of theology is to demonstrate the possibility of reconciling scientific knowledge of the world with supernatural, revealed knowledge.

As a scholar and theologian, Lemaître considered himself primarily a scientist. In his research practice, he adhered strictly to the rules of science, while allowing for collaboration and dialogue. He spoke of the need for philosophical interpretations of scientific theories, but emphasised that these interpretations should not be treated on par with scientific claims. He made a clear distinction between scientific (natural, empirical) knowledge and theological (religious) knowledge, yet he was aware of the limitations of the former and advocated for openness to other domains of knowledge. In a similar vein, Pope John Paul II stated in his Letter to the Reverend George V. Coyne SJ, Director of the Vatican Observatory:

> The Church does not propose that science should become religion or religion science. On the contrary, unity always presupposes the diversity and integrity of its elements.… To be more specific, both religion and science must preserve their autonomy and their distinctiveness. Religion is not founded on science, nor is science an extension of religion. Each should have its own principles, its procedure pattern, its diversities of interpretation, and its own conclusions. Christianity possesses the source of its justification within itself and does not expect science to constitute its primary apologetic. Science must show its own worth. Although each can and should support the other as distinct dimensions of a common human culture, neither should assume that it forms a necessary premise for the other. The unprecedented opportunity we have today is for a common interactive relationship in which each discipline retains its integrity and yet is radically open to the discoveries and insights of the other. (JOHN PAUL II 1988)

Pope John Paul II advocated for the autonomy and independence of science and theology, emphasising that each should maintain its own distinct methods of research, conceptual apparatus, interpretations, and conclusions. However, both should remain open to dialogue and cooperation in the search for answers to fundamental human questions. The official teachings of the Catholic Church assert the pursuit of a single truth, as God created one world, with science and faith representing different ways of perceiving it. There are no two conflicting truths—religious and scientific. Since the same God created

the world, endowed humans with cognitive abilities, and revealed supernatural truths, there can be no incompatibility between scientific and theological knowledge (First Vatican Council).

In this dialogue, which maintains mutual autonomy, the goal is not to integrate theology and science, but to collaborate in constructing a coherent vision of reality. The aim is to demonstrate that there is no inherent conflict between faith and science, showing how scientific knowledge can be harmonised with revealed supernatural truths. This approach allows believers to build an internally consistent worldview that encompasses both the natural and the supernatural dimensions of reality (RUSECKI 2009, 120–23; BRONK 1998, 248).

In attempting to address these questions, it should be emphasised that respecting the principles of autonomy of cognitive domains and epistemological and methodological uniformity does not necessarily lead to isolationism in the relationship between natural sciences and theology. It is possible to maintain openness, engage in dialogue, and seek answers to important human questions. Such cooperation can inspire meaningful cognitive developments in both scientific and theological fields. It seems that Lemaître would endorse this view, provided that dialogue and mutual openness do not compromise the independence and autonomy of each field.

The most challenging issue is the possibility of synthesising (integrating) natural and theological knowledge into a coherent picture of the entire reality. In some form, every thinking person does this by constructing their own worldview, drawing on both scientific knowledge and personal religious beliefs. However, it should be emphasised that this is a construct that transcends both cognitive domains. Such a picture becomes more cognitively valuable the more it involves the critical reflection typical of philosophy, which serves as a bridge between science and theology. The shape of the resulting picture of reality will, of course, depend significantly on the adopted assumptions (ontological, cognitive, worldview, and religious). This can be seen as the primary, though most challenging, goal of philosophy—one that it will continuously approach, though never fully achieve.

The question posed in the title of this article might suggest that only one of the three types of relationships between cosmology and theology is relevant. In reality, each of these positions is valuable and necessary, but each should be properly understood and situated at the appropriate methodological level. At the first level (the subject level in cosmology and theology), the independence of research should be respected. However, dialogical openness—capable of offering inspiration—can and should also be pursued. The second

level (the meta-subject or philosophical level) is the appropriate place for testing and exploratory dialogue, as well as for collaboration aimed at integration. The goal of such integration is an explanation that leads to understanding all of reality—both natural and supernatural—through the construction of a coherent worldview. At the third level (the metaphilosophical level), an evaluation of proposed worldviews takes place, and a decision is made regarding the choice of one among them.

A violation of the principle of autonomy (independence) in subject-level research in cosmology and theology, resulting from a failure to acknowledge the epistemological and methodological distinctiveness of each domain of knowledge, leads to negative consequences. Examples of such positions include the creationist interpretation of the initial singularity, the theistic explanation of the fine-tuning of the universe for biological life, and the interpretation of the course of evolution as the result of direct divine intervention (TUREK 2011b). This can hinder the development of natural science, for example, by abandoning the search for natural causes in favour of invoking God as an explanatory principle in scientific matters (the "God of the gaps" concept), or by engaging in naïve apologetics of religious knowledge, which loses its "scientific" justification once natural causes are discovered by scientists.

Therefore, at the subject level, the independence of research and the prohibition against exceeding disciplinary competence should be upheld. This ensures the integrity of both types of knowledge and prevents cognitive chaos arising from the conflation of scientific and religious theses (TUREK 2011a). However, this does not imply isolation. Scientific research should be accompanied by openness to new discoveries and insights. A sign of such openness is the aforementioned inspiring dialogue, which can broaden intellectual horizons, suggest research problems, motivate their pursuit, and even indicate possible solutions (hypotheses). An example of such a positive influence on scientific research is the Christian belief in God's creation of the world, which contributed to the development of modern science and technology (KAISER 2012).

All other expressions of mutual openness, uses of research results, and forms of collaboration should be situated at the meta-subject (philosophical) level. At this level, a critical dialogue regarding the conclusions and hypotheses formulated at the first level can and should take place. This postulate is particularly relevant for theology, which should be familiar with and utilise

the achievements of the natural sciences to reveal and correct erroneous interpretations of its own claims (PABJAN 2013, 132).[7]

At the meta-subject (philosophical) level, assumptions (particularly philosophical), methods, and language should also be examined. This applies equally to both theology and the natural sciences, as neither the theologian nor the cosmologist operates in a philosophical vacuum. Although a separation between the scientific and philosophical domains of knowledge is often advocated, philosophical beliefs nonetheless function as a kind of background knowledge that influences either the acceptance or rejection of scientific theses. A well-known example is Einstein's resistance to the dynamic model of the universe, the reluctance of some theologians to accept the heliocentric model.

If we follow St. Augustine's concept of the unity of truth, there can be no contradiction between the religious and scientific images of the world. The world is one, but it is perceived, described, and explained from various (aspectual) perspectives. The key lies in the proper interpretation of knowledge acquired through different methods, as well as in reflecting on its epistemic status, such as truthlikeness, theory-ladenness, and fallibility. Both cosmology and theology continuously develop, thereby fulfilling their purpose of progressively approaching the truth.[8] In this process, there is room for a constructive dialogue aimed at providing explanations that lead to a deeper understanding of the entirety of reality. The goal is to assist the human person in constructing a coherent worldview by reinterpreting theological theses so that

[7] In this context, Pabjan (2013, 133–35) explains why the relationship between theology and the natural sciences is asymmetrical: it is only theology that must ensure its worldview remains consistent with that of science. Scientists, operating under the principle of methodological naturalism, formulate their theses without reference to religious claims. Theologians, however, when interpreting the truths of faith, should take into account what contemporary science reveals about material reality. Historically, resistance to scientific knowledge has led to problematic episodes, such as the condemnation of heliocentrism or the rejection of the theory of evolution. According to Pabjan, current scientific issues that require theological reflection include: the origin of the universe, the emergence of life and of the human body through evolution, the creation of the human soul, and the theological interpretation of original sin.

[8] An illustrative example is the evolution of the cosmological model of the universe from Lemaître's concept to the contemporary ΛCDM model. Key developments include: (1) the replacement of the decaying "primeval atom" with an extremely hot, dense, and dynamic plasma; (2) the introduction of the inflationary paradigm, which explains the homogeneity of the cosmic microwave background radiation (CMBR) and the large-scale structure of the universe; (3) the reinterpretation of the "initial moment" of the universe's origin as a possible transition between different physical states, or even a timeless epoch; and (4) the incorporation of the concepts of dark matter and dark energy. By contrast, examples of changes within theology include the promulgation of new dogmas.

they align with the correct interpretation of scientific knowledge.[9] A worldview constructed in this way will neither be static nor final, as it will reflect the evolving nature of both scientific and theological knowledge. Therefore, it is important, during this process, to assess—at least approximately—the degree of certainty associated with individual statements in both domains.

It must once again be emphasised that the appropriate level for achieving the goal of constructing a coherent worldview is the meta-subject (philosophical) level, especially as represented by the philosophy of nature and the philosophy of science, both in relation to the natural and the human sciences (LEMAŃSKA 2010; HELLER 2014; HAJDUK 2007). This discipline serves as a bridge that connects not so much the specific knowledge in the fields of cosmology and theology, but rather the conclusions (implications) drawn critically, analysed, and properly interpreted from both disciplines. In this sense, a worldview represents an integration of elements from scientific, philosophical, and theological knowledge. Such integration is one of the primary cognitive goals of the human quest to understand the reality in which we live and act. At the third and highest level (metaphilosophical), the proposed worldviews constructed at the second (philosophical) level are evaluated. This level engages epistemic axiology, as discussed by authors such as Rescher (2006), Hajduk (2011), Lekka-Kowalik (2008), and Jodkowski (2008), who have proposed a range of criteria for evaluating knowledge and worldviews—among them internal coherence, explanatory depth, simplicity, plausibility, and the capacity to integrate diverse domains of knowledge. Their value is thus assessed, particularly in terms of coherence and explanatory power. This is also the level at which a decision is made regarding the choice of one of these worldviews.

[9] The difficulty of this task is evidenced by various attempts to identify legitimate methods for interpreting scientific theses (or facts) in ways that make them usable within philosophical reflection. In the Polish context, such efforts have been undertaken, among others, by Kazimierz Kłósak, who explored the ontological implications of reductionist approaches; Zygmunt Hajduk, who developed a theory of inter- and intra-theoretical relations; and Józef Turek, who analysed the philosophical interpretations of scientific facts.

CONCLUSION

Guided by the principle of the separation of scientific and religious knowledge, Lemaître opposed the use of cosmological knowledge to defend or justify theological theses. He maintained that his theory, particularly the initial singularity, was neutral with respect to metaphysical or religious questions and, as such, did not support either the Christian doctrine of the creation of the world *ex nihilo* or the materialist view denying the existence of a transcendent reality.

A reconstruction of Lemaître's views shows that they are highly compatible with established epistemological and methodological principles developed in the philosophy of science. With respect to the relationship between cosmology and theology, this implies that they should be treated as autonomous and independent scientific disciplines, which must not be conflated. Autonomy, coupled with mutual respect, can and should lead to dialogue and collaboration in the pursuit of answers to important human questions.

It must be noted, however, that dialogue at the subject level can only serve an inspiring and motivating function. Other forms of dialogue—such as the testing dialogue, aimed at resolving inconsistencies between the cosmological and theological pictures of the world, and the searching dialogue, directed towards the explanation and understanding of various aspects of reality—should take place at the meta-subject (philosophical) level. It is also at this level that collaboration aimed at the integration (synthesis) of different types of knowledge and the construction of a coherent worldview should occur. In this process, philosophy plays a crucial role as both a meeting ground and a platform for dialogue, as well as a tool for supporting and guiding the construction of a complementary worldview.

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COSMOLOGY AND THEOLOGY: INDEPENDENCE, DIALOGUE, OR INTEGRATION? A PROPOSAL INSPIRED BY GEORGES LEMAÎTRE

Summary

This article examines the relationship between cosmology and theology, addressing the question of whether their proper relation should be one of independence, dialogue, or integration. The point of departure is Ian Barbour's typology of science–religion relations (conflict, independence, dialogue, integration), with particular emphasis on the model of independence. The main reference point is the position of Georges Lemaître — a Catholic priest and cosmologist — who advocated a clear separation between scientific and theological discourse in order to avoid misunderstandings arising from a confusion of epistemological domains. His views are largely consistent with principles developed in the philosophy of science, especially the so-called principle of epistemological

and methodological homogeneity, which follows from the widely accepted autonomy of the sciences, philosophy, and theology. At the level of subject research, cosmology and theology should therefore remain independent. However, this independence does not entail isolation, as openness in the form of inspiring dialogue is both possible and desirable. At the meta-subject (philosophical) level, a dialogical engagement should be undertaken to seek answers to fundamental human questions. This dialogue should aim at constructing a coherent vision of reality as a synthesis of various types of knowledge. At the highest (metaphilosophical, axiological) level, the epistemic value of the constructed worldviews should be assessed in order to determine which worldview offers the most coherent and explanatory understanding of reality.

Keywords: relationship between science and religion; Lemaître; cosmology; theology; worldview

KOSMOLOGIA I TEOLOGIA: NIEZALEŻNOŚĆ, DIALOG CZY INTEGRACJA? PROPOZYCJA INSPIROWANA POGLĄDAMI GEORGESA LEMAÎTRE'A

Streszczenie

Artykuł analizuje relację między kosmologią a teologią, podejmując pytanie o możliwość ich niezależności, dialogu bądź integracji. Punktem wyjścia jest klasyfikacja relacji nauka–religia zaproponowana przez Iana Barboura (konflikt, niezależność, dialog, integracja), ze szczególnym skupieniem się na idei niezależności. Głównym punktem odniesienia jest stanowisko Georges'a Lemaître'a – katolickiego księdza i kosmologa – który postulował rozdzielenie naukowego i teologicznego dyskursu w celu uniknięcia nieporozumień wynikających z błędnego mieszania porządków epistemologicznych. Jego poglądy pozostają w wysokim stopniu zgodne z wypracowanymi w filozofii nauki regułami, zwłaszcza tzw. zasadą jednorodności epistemologiczno-metodologicznej, stanowiącą bezpośrednią konsekwencję przyjmowanej przez większość filozofów autonomii nauk szczegółowych, filozofii i teologii. Na poziomie badań przedmiotowych kosmologia i teologia powinny być zatem niezależne. Nie oznacza to jednak izolacji, gdyż możliwa i zalecana jest otwartość w formie dialogu inspirującego. Natomiast na poziomie metaprzedmiotowym (filozoficznym) może i powinien być podejmowany dialog ukierunkowany na poszukiwanie odpowiedzi na ważne pytania nurtujące człowieka. Taki dialog winien zmierzać do zbudowania spójnej wizji rzeczywistości, będącej syntezą różnych typów wiedzy. Na najwyższym (metafilozoficznym, aksjologicznym) poziomie należy oszacować epistemiczną wartości skonstruowanych obrazów świata i na tej podstawie dokonać wyboru najlepszego światopoglądu.

Słowa kluczowe: relacja między nauką i religią; Lemaître; kosmologia; teologia; obraz świata